RESTRICTED CIRCULATION

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AGRICULTURAL MEMORANDUM NO 376

FORECASTING SEASONAL TOTALS OF GRAMINEAE POLLEN USING SPORE TRAP DATA

L P SMITH

Mean totals on a daily basis for 10 years, May to August, are available for Central London.

The cumulative seasonal total has varied from 2750 in 1968 to 8480 in 1964.

An attempt can be made to forecast this seasonal total by using the dates when the daily accumulation reaches 300 and 700.

Data	Year	Date reaching 300	Date reaching 700	Total
	1961	June 4	June 7	6380
	1962	June 14	June 19	4130
	1963	June 12	June 15	3090
	1964	May 29	June 6	8480
	1965	June 11	June 13	4180
	1966	June 2	June 9	5020
	1967	June 14	June 18	3450
	1968	June 10	June 16	2940
	1969	June 7	June 13	3980
	1970	June 9	June 15	2940

Formula 1 Total (in 100s) = $67-2.8D_3$
where D_3 is the date in June when 300 is reached.

Formula 2 Total = $83 - D_3 - 2.3 D_7$
where D_7 is the date in June when 700 is reached

Severity categories could be defined as follows:

Above 5500	Severe
4000 - 5500	Moderate
Below 4000	Light

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Results

Year	Total Pollen (100s)			Forecast of Severity		
	Actual	Formula 1	Formula 2	1	2	Actual
1964	85	73	71	Severe	Severe	Severe
1961	64	56	63	Severe	Severe	Severe
1966	50	61	60	Severe	Severe	Mod
1965	42	36	42	Light	Mod	Mod
1962	41	28	25	Light	Light	Mod
1969	40	47	46	Mod	Mod	Mod
1967	35	28	28	Light	Light	Light
1963	31	33	36	Light	Light	Light
1970	29	42	39	Mod	Light	Light
1968	27	39	36	Light	Light	Light
			Correct forecasts	6	8	

In view of the fact that these forecasts can be made when only about 10 per cent of the total pollen has yet been released the accuracy of the forecasts is acceptable.

It might be possible to include a correction factor to the dating by use of wind direction data.

Any comment or criticism on this paper should be referred to the author.

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June 1971

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